USER'S MANUAL FOR THE

IMPORTANT

Before you begin...

Please complete the attached Warranty Registration Card and return it to Summagraphics today. (Users outside Europe, Africa and the Middle East should check the address on the back of the Warranty Registration Card.)

Failure to return the duly completed Warranty Registration Card might delay response to your warranty and service enquiries.

Houston Instrument is a brand name of Summagraphics Corporation.

NOTE

When selecting software drivers: If the Summagraphics name is not mentioned in the list of available software drivers, use Houston Instrument drivers.

Manual Number **: MI9991 rev 001 English**

Summagraphics

FCC NOTICE

The SummaCUT D500 cutters have been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. These cutters generate, use, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of these cutters in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution !

Changes or modifications, not expressly approved by Summagraphics, who is responsible for FCC compliance, could void the users authority to operate this equipment.

DOC NOTICE

The SummaCut D500 cutter does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

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MEDIA CERTIFICATION A-1

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SECTION 1

GENERAL INFORMATION

1.1. INTRODUCTION

The Summagraphics SummaCut D500 cutter has been designed to produce computer-generated graphic designs on cut sheet or roll vinyl media. By replacing the knife with a fiber tip pen, the cutter can also be used to produce inexpensive previews of new graphic designs on paper.

1.1.1. PRODUCT FEATURES

The following are the main features of the SummaCut D500 cutter.

- Variable media widths from 60 mm to 525 mm (2.4” to 20.7").
- User-selectable DM/PL™, HP-GL™ and HP-GL/2 ™ software protocols.
- Interchangeable pen for producing preview plots of sign designs on paper.
- Adjustable knife pressure and offset settings controlled by microprocessor
- Communication with host computer via standard serial RS-232-C
- 12-key control panel.
- Metric or English units.
- User-addressable resolution : 0.1 mm, 0.025 mm, 0.001" or 0.005".
- Menu mode for selection of the cutter's power-up operating configuration.
- Convenient operator control via a 2-line 16-character liquid crystal display.
- Extensive internal test routines.
- Wide variety of axial cutting speeds (in metric or English units).
- Up to four separate user configurations stored in the non-volatile memory.
- Automatic media pull from roll.
- Media sensing.
- Simple origin adjustment to any location.
- Concatenation and curve smoothing to obtain better cut quality.

- Re-cut of last file.
- Manual knife for cutting off the finished sign.
- Knife depth and offset test.
- Overcut for easy weeding.

1.1.2. SUMMACUT D500 USER'S MANUAL

The SummaCut D500 User's Manual provides the following information :

- Full technical specifications for the SummaCut D500 and the media to be cut.
- A complete description of the SummaCut D500 main components.
- Step-by-step instructions for knife and pen installation, and media loading.
- Instructions for online and local mode ( ) operations.
- Instructions for USER CONFIGURATION and INTERNAL TESTS operations.
- Maintenance and cleaning instructions.
- Information about the RS-232-C interface cables used to inter-connect the cutter and IBM, IBM-compatible, Apple and Apple-compatible host computers.

1.2. SPECIFICATIONS

1.2.1. CUTTER

	mm	inch
Height	255	10
Width	1060	41,7
Depth	410	16,1
Weight	21	47

TABLE 1-1 :
SUMMACUT D500 CUTTER SPECIFICATIONS

1.2.2. MEDIA

	mm	inch
Width	60 to 525	2.4 to 20.7
Tracking Performance	4 m / 13 feet max. within guaranteed specifications*	
Thickness	0.05 to 0.8	0.002 to 0.030
Max.cutting/ plotting width	500	19,7
Min. margins**	25	1
Front margin	25	1
Rear margin		
Sensor on	42	1.7
Sensor off	30	1.2

* Media lengths greater than 4 m (13 feet) can be handled, but compliance with specifications is not guaranteed (will be dependent on media type, media size and other parameters not mentioned here).
** for positioning of the pinch rollers (see section 1.8.)

TABLE 1-2 :
SUMMACUT D500 MEDIA SPECIFICATIONS

Vinyl Types

A wide range of vinyl types has been evaluated and tested on the SummaCut D500. When using duly certified media, operation in accordance with the functional specifications of the SummaCut D500 is warranted. Other media should be certified by Summagraphics before use to ensure performance in compliance with specifications.

For a full list of all duly certified media suitable for friction drive operation, see Appendix A.

Plotting Paper

Bond paper (120 g/m² recommended)

1.2.3. KNIFE AND PEN

The SummaCut D500 is supplied with two standard knife blades (for vinyl media) and a black fibre tip pen.

Knife	*Medium*	*Quantity*
Standard knife	standard, reflective & fluorescent vinyls	2 off
Knife for masking stencil	masking stencil & thick material	optional

Pen	*Colour*	*Quantity*
Fiber tip pen	black	1 off
Roller ball pen	black	optional

TABLE 1-3:
SUMMACUT D500 KNIVES AND PENS

To order replacement knives and/or pens, contact your local dealer, quoting the part numbers listed in table 1-9.

The SummaCut D500 cutter will only perform according to specifications if a genuine Summagraphics knife or pen is installed. Do not replace the standard knife or pen with products from other manufacturers.

1.2.4. INTERFACE

Communication	asynchronous RS-232-C
Serial : I/O Port connector	DB-9P
Mating connector	DB-9S
Byte format	8 data bits, 2 stop bits, no parity
Baud rate	38400, 19200, 9600, 4800, 2400 bps

TABLE 1-4:
SUMMACUT D500 INTERFACE SPECIFICATIONS

1.2.5. FIRMWARE

Language	DM/PL, HP-GL (758x emulation), HP-GL/2
Supported character sets	Standard ASCII
Supported fonts	Sans serif (single stroke & medium)
ROM-based plots	Confidence plot, DIN plot

TABLE 1-5:
SUMMACUT D500 FIRMWARE

1.2.6. PERFORMANCE

Cutting specifications on 0.05 mm (0.002") wax-backed vinyl, total media thickness not greater than 0.25 mm (0.010")

Axial speed	50 to 500 mm/s	2 to 20 ips
Default speed	500 mm/s	20 ips
Acceleration	up to 2 G	up to 2 G
Addressable resolution	0.025 mm, 0.1 mm	0.001", 0.005"
Default resolution	0.025 mm	0.001"
Mechanical resolution	0.0127 mm	0.0005"
Accuracy	0.2% of move or 0.25 mm, whichever is greater*	0.2% of move or 0.010", whichever is greater*
Knife pressure	0 to 400 gr.	0 to 400 gr.
Pen pressure	0 to 400 gr	0 to 400 gr.

*Excludes differences due to media expansion, stretching, etc.

TABLE 1- 6:
SUMMACUT D500 PERFORMANCES

1.2.7. CERTIFICATIONS

FCC Class A
EN50022 (pending)
IEC 950
UL
CSA

1.2.8. ENVIRONMENTAL

(cutter without media)

Operating Temperature	15 to 35° C	59 to 95° F

Storage temperature	-30 to 70° C	-22 to 158° F
Relative humidity	35 - 85 %, non con-densing	35 - 85 %, non con-densing

TABLE 1-7:
SUMMACUT D500 ENVIRONMENTAL SPECIFICATIONS

IMPORTANT HINT

The use of dimensionally stable media is an essential pre-requisite to obtaining high cut quality. Additionally, media expansion or contraction may occur as a result of temperature variations.
To improve the dimensional stability of media, let it stabilise to the current environmental conditions before usage for a minimum period of 24 hours.

1.2.9. ELECTRICAL

Mains Supply : 48-62 Hz, single phase.

Nominal line	Min./Max. line	Fuse
100 V AC	89 - 108 V AC	1.0 A, Slo-Blo
120 V AC	108 - 130 V AC	1.0 A, Slo-Blo
220 V AC	197 - 238 V AC	0.5 A, Slo-Blo
240 V AC	216 - 260 V AC	0.5 A, Slo-Blo

TABLE 1-8:
SUMMACUT D500 ELECTRICAL SPECIFICATIONS

1.3. CUTTER ACCESSORIES AND CONSUMABLES

The following accessories and consumables are available for your SummaCut D500 cutter :

OPTIONS/ ACCESSORIES/ CONSUMMABLES	
User's Manual	MI9991
DM/PL Cutter Commands Summary	MI19975
Power Supply Cables	market specific
Serial Interface Kit, consisting of: - 9 pin to 9 pin cable - 9 pin to 25 pin conv. - 9 pin to 8 pin DIN conv.	423-155
Standard knife	391-360
Standard knife holder	391-332
Sandblast knife	391-358
Media support system	391-575
Sandblast knife holder	391-363
Fiber tip pen black	MP0636
Roller ballpen	color specific
Memory Expansion Kit to 2.5 MB total memory	EB-2
Memory Expansion Kit to 4 MB total memory	EB-4

TABLE 1-9:
SUMMACUT D500 ACCESSORIES AND CONSUMABLES

1.4. REAR PANEL COMPONENTS

In order to get acquainted with your SummaCut D500 cutter, read the following description of the rear panel components. Figure 1-1 shows the location of the main components.

FIGURE 1-1:
SUMMACUT D500 REAR PANEL

1. ***RS-232-C Port***.- This DB-9P connector provides the communication link between the cutter and a host computer. It allows bidirectional communication between the host computer and the cutter.

2. ***Power ON/OFF switch***.- This rocker switch sets the cutter's power to ON or OFF. To switch the power ON, press the "I" side of the rocker switch. To switch the power OFF, press the "O" side of the rocker switch.

3. ***Power Entry Module***.- The fuse box, the voltage select board and the AC power cord receptacle are located in the power entry module.
   The power-up procedure is explained in detail in Section 1.6.
   For information about the conversion of the cutter's operating voltage, see Section 3.2.

1.5. FRONT PANEL CONTROLS

In order to get acquainted with your SummaCut D500 cutter, read the following description of the front panel controls and components.
Figure 1-2 shows the location of the main components.

FIGURE 1-2:
SUMMACUT D500 CUTTER, FRONT VIEW

1. ***Pinch roller lever arm***.- This lever is used to raise and lower the pinch rollers during media loading (Media loading is discussed in Section 1.8).

2. ***Media Drive Sleeves***.- The media drive sleeves move the media only when the pinch rollers are in the 'down' position.

3. ***Tool Carriage***. - The tool carriage is the mount for the knife holder and the pen .

4. ***Control Panel***. - The control panel contains 12 keys. All cutter activity can be initiated from the control panel. This includes initiating remote mode for computer control, local mode for manual operation and menu mode. Each control panel function is explained in Section 2.1.

5. ***Display***. - The 2x16 character display informs the user about the current status of the cutting process or actions which need to be taken.

6. ***Sensors***. - The sensors detect the presence of a media to avoid any damage to the cutting strip. Upon powering up the machine, they cause the media to move all the way to the front edge of the platen.

7. ***Pinch rollers***.- The pinch rollers hold the media clamped between the rubber rollers and the media drive sleeves.

8. ***Cutting strip***.- Soft strip to avoid any damage to the knife tip when no media has been loaded. Since cutting is done on the cutting strip it is essential that the cutting strip remains intact.

1.6. POWERING UP THE CUTTER

1.6.1. EARTHING

SAFETY WARNING

An insulated earth conductor must be installed as part of the branch circuit which supplies power to the wall outlet to which the cutter is connected. The earth conductor must have the same size, insulation material and thickness as the earthed and unearthed branch-circuit supply conductors, but the insulating sheath should be green, or green with yellow striping.

The earth conductor described above must be earthed at the electrical distribution board, or, if power is supplied by a separate system, at the power supply transformer/motor generator set.

The wall sockets into which the cutter is plugged must be of the earthed type. The earthed conductors serving said wall sockets must be properly connected to earth.

CAUTION

Before plugging in the cutter's power cord to a power source, make sure the cutter is set to the correct operating voltage (100 V, 120 V, 220 V, or 240 V AC) see section 3.2.

See Table 1-8 for the minimum and maximum operating voltage for the different voltage ratings.

To check the operating voltage setting, locate the power entry module (shown in Figure 1-1) on the cutter's rear panel. The power entry module shows four possible voltage settings (100 V, 120 V, 220 V and 240 V). A pin next to one of the voltage settings indicates the voltage setting currently selected for the cutter. If this setting does not match the voltage supplied to your site, you will have to change the voltage setting prior to powering up the cutter.

For information about the conversion of the cutter's operating voltage and the exact fuse ratings, see Section 3.2.

FIGURE 1-3:
EARTH CONNECTION

IMPORTANT OPERATIONAL TIP

This cutter must only be used with a power outlet that is properly grounded to earth. Use of an ungrounded outlet exposes the operator to risk of electric shock and will also lead to malfunctioning of the cutter.

1.6.2. POWER-UP PROCEDURE

➔ To power up the cutter, proceed as follows:

1. Make sure the cutter is placed on a flat, level and sturdy surface.
2. Plug one end of the AC power cord into the AC power cord receptacle on the cutter's rear panel.
3. Plug the other end of the AC power cord into the wall socket.
4. Press the "I" side of the ON/OFF rocker switch on the rear panel to switch the cutter ON.
5. The message "INSERT MEDIA" is displayed on the LCD if no media is loaded and the pinch rollers are in the up position.

1.7. INSTALLATION OF A KNIFE OR PEN

1.7.1. KNIFE INSTALLATION

SAFETY WARNING

Your cutter uses razor-sharp knives. The knife blades may cause serious personal injuries if handled without proper care. Use extreme care when operating the cutter and when installing, removing or handling the knife!

➔ To set up your cutter for knife operation, proceed as follows.

1. As shown in Figure 1-4, insert the knife blade into the knife holder using a pair of tweezers.

FIGURE 1-4
BLADE INSERTION

2. Set the knife blade length to zero by aligning the blade tip with the tip of the holder. An easy way of performing this is by holding the knife holder against ones fingertip and gradually increasing the blade length by turning the adjustment knob until you feel the knife tip touching your fingertip.

3. Extend the tip of the blade by the distance required for the desired cutting media (**t**), as shown in Figure 1-5. The blade should only extend beyond the knife holder sufficiently far to completely cut through the film layer yet avoid penetrating through the backing, which would risk cutting into and damaging the cutting strip.

FIGURE 1-5
BLADE LENGTH ADJUSTMENT

4. Turn the cutting depth adjustment screw clockwise to increase the cutting depth. Turning the cutting adjustment screw anticlockwise will decrease the cutting depth.

FIGURE 1-6
SETTING KNIFE DEPTH

5. To install the knife into the tool carriage :

   - loosen the clamping screw, swing clamp arm back and load the knife
   - close the clamp arm and tighten the clamping screw

6. Set the knife pressure as follows :

   Press the

key (MENU) key until the message 'USER CONFIG 1' is displayed on the display.

↓ USER CONFIG 1
← →

Press the jogging key until the message 'KNIFE PRESS' is displayed.

↑↓ KNIFE PRESS
← * 120 g → 1= TEST

Press the or key to modify the knife pressure.

Press the key to confirm the selection.

Press the **1** key to perform a knife depth test as illustrated in figure 1-7 .

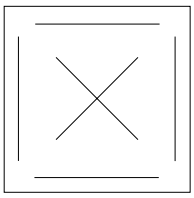


FIGURE 1-7
KNIFE DEPTH TEST PATTERN

The knife depth is correctly set when the test pattern is visible on the front side of the media backing, but not on the rear side of the media backing.

In general, you should increase the knife depth and knife pressure when using thicker types of vinyl.

NOTE

As the ideal knife pressure setting depends upon the thickness and the type of media to be cut, adjusting the knife pressure will require some practice. In general terms, you should increase the pressure when cutting thicker types of vinyl . For thinner types of vinyl, you will normally have to reduce the knife pressure.

CAUTION

After setting the cutting depth and/or the knife pressure, perform a thorough visual check of the knife blade, which can be seen protruding from the knife holder, and test cutting results on a scrap of vinyl media.
DO NOT OPERATE THE CUTTER if the knife blade cuts through the media backing, as this will seriously damage the cutter's rubber cutting strip and the knife.

CAUTION

For most vinyl cutting activities, the knife blade tip will be barely visible at the bottom of the knife tool. If you can clearly see the knife blade tip, you will probably need to readjust the cutting depth.

To prevent damage to the cutter, check the depth of the knife blade tip and the quality of the cut each time you load a different type of vinyl into the cutter.

1.7.2. PEN INSTALLATION

The SummaCut D500 cutter can also be operated with a pen. After replacing the knife with a pen, the cutter can be used as a plotter to draw draft plots of new or existing designs on paper.

➔ To install the pen, proceed as follows:

1. To configure the cutter for ballpoint pen operation, press the key.

   ```
   SELECT TOOL
   ←    *DRAG KNIFE        →
   ```

   Press the left or right jogging key until PEN appears on the second line of the LCD .

   Press ENTER and an asterisk will appear next to PEN, indicating that the PEN is selected.

   Press the key.

   ```
   INSERT  PEN                P
     *1 CONTINUE
   ```

2. Remove the knife by loosening the clamping screw and swinging the clamp arm back (refer to Fig. 1-6).

3. Install the pen, close the clamp arm and tighten the screw.
   Press on the **1**-key .
   A small P (for "Pen") will be displayed in the upper right corner of the LCD.

1.8. LOADING MEDIA

The following procedures are mainly written for using roll media. When using sheets there are two possibilities. Firstly, when using long sheets, roll the sheet up so that the alignment is identical to that of a roll. Secondly, when using short sheets, alignment is not so important. If the sheet is cut off perpendicularly, it can be aligned to the front border.

1.8.1. POSITIONING THE PINCH ROLLERS

When working with cut sheet or roll media, the traction resulting from the contact between the pinch rollers and the drive sleeves moves the media in the X axis (forward/backward).

Proper movement of the media will only occur if the media is driven by the pinch rollers correctly located over two drive sleeves.

The SummaCut D500 cutter accommodates variable media widths, from a minimum width of 60 mm (2.4") up to a maximum width of 525 mm (20.6"). The maximum useful cutting width is 500 mm (19.7").

The pinch rollers are lowered or raised simultaneously by means of the pinch roller lever arm located on the right hand side of the cutter, next to the control panel. The rollers must be lifted to facilitate vinyl loading during which the media is fed from the rear of the cutter to the front.

When in the up position, the pinch rollers can be moved manually to the left or the right along the pinch roller shaft, so that they can be easily positioned in a detent (click position) where they are to be lowered to ensure optimum traction on the media.

When the pinch rollers are in the up position, the message "LOWER PINCH ROLLERS" is displayed on the LCD.

CAUTION

Always make sure that the pinch rollers are in the fully raised position before sliding them to the left or right.

The pinch rollers MUST be positioned correctly and lowered onto the media before an automatic load sequence is initiated. Make sure that the two pinch rollers are positioned above the drive sleeves. The left pinch roller should be positioned in a detent (click position). The right pinch roller should be positioned somewhere on the long drive sleeve that only has a click position at the beginning and at the end of the sleeve. The drive drum will move the media only when the pinch rollers are lowered onto the sleeves.

Before lowering the pinch rollers, carefully check the position of the rollers in relation to the drive sleeves. When the pinch rollers are DOWN, the two rollers must run over the sleeves in order to ensure proper media traction. It is very important that both media edges always rest on the sleeves in such a way that the two pinch rollers, which are positioned 3 to 15 mm (0.1" to 0.6") from the media edge, will run over the sleeves when lowered to the drive drum.

1.8.2. FEEDING AND POSITIONING MEDIA

The loading procedure described below has been found to give excellent repeatability. When loading media, adhere to these step-by-step instructions strictly.

➔ To load media, proceed as follows:

1. Raise the pinch rollers by means of the pinch roller lever arm located on the right-hand side of the cutter, next to the control panel.

FIGURE 1-8 :
MEDIA POSITIONING

2. When processing roll media and using the optional media support system, place the roll of media on the media support rollers at the rear of the machine.

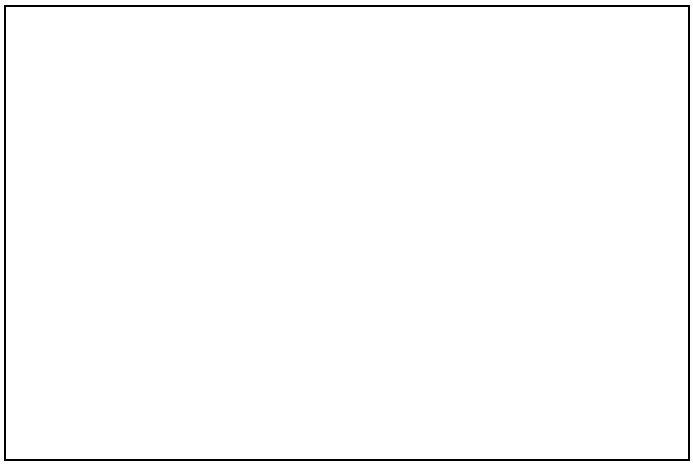


FIGURE 1-9
FEEDING ROLL MEDIA USING THE MEDIA SUPPORT SYSTEM

3. Start feeding the media from the rear of the machine.
   Position the left media edge on the left-most drive sleeve and check whether the right media edge is positioned over the long drive sleeve. If so, the left pinch roller can be positioned in a detent (click position) over the

left-most sleeve and the right pinch roller is positioned somewhere over the long drive sleeve to suit the media width. The pinch roller can be lowered anywhere between the two detent (click positions) of the long drive sleeve to allow for flexibility in holding any media width.
In circumstances where the above does not work, because your media is too narrow to reach the long drive sleeve, try positioning the left media edge over the second left drive sleeve and position the right media edge somewhere on the long drive sleeve.

4. Make sure that the media follows a straight path from the roll of material.

5. The pinch rollers should be positioned over the drive sleeves about 3 to 15 mm (0.1" to 0.6") away from the media's outer edges.

FIGURE 1-10
PINCH ROLLER POSITIONING

6. Lower the pinch roller lever to press the media firmly against the drive sleeves. After one second the tool carriage automatically moves from the right to the left to sense the usable width.

NOTE

It is not necessary to unroll the media manually from the roll. The cutter will unroll the media automatically during the load sequence.

7. The positioning and routing of sheet material is identical to that of roll media.

8. The cutter is now ready for the actual load procedure, which may be controlled from the control panel.

1.9 MEDIA LOAD PROCEDURE

SAFE OPERATION

Do not place any objects in front of, or behind, the cutter that could interfere with cutter operation. Make sure the media is free to move back and forth. Keep hands, hair, clothing and jewellery away from moving parts.

Turn the power on and the following message will appear on the LCD screen :

```
PLEASE WAIT
LOADING...
```

The cutter will automatically start executing a minimal loading procedure consisting of : - a media width measurement

- a 45° test
- media is unwound over a length equal to the width measured between the pinch rollers

When the next display appears, the cutter is ready to receive a file :

```
500mm/s   120 g                    K
.45mm    ONLINE                    1
```

When sending a cut file , the cutter will automatically pull the required media from the roll. The pulling is done in steps such that for each step the length pulled off the roll is identical to the width measured between the pinch rollers.

IMPORTANT

Tracking of longer signs is only guaranteed when you perform the **full load procedure** !

Proceed as follows to complete the full load procedure :

Press the key and the following message will appear on the LCD screen :

```
SCREEN: SET ORIGIN
X=0  Y=YYY                         ↵
```

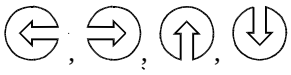
Press the key again and the following message will appear on the LCD screen :

```
LOAD
1= ROLL  2= SHEET
```

Press the **1** key if you want to load media from **a roll**. Press the **2** key if you want to load media in **sheet** form.

If you choose 'sheet' and the sensors are enabled, then the sheet is automatically loaded.
If you choose 'roll', the following display will appear on the LCD :

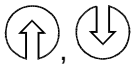
```
        SET ORIGIN
X=0  Y=YYYY
```

Using the  , , , jogging keys, you can position the knife (i.e. the origin) at any location. Press the key to confirm the selected point of origin.

```
      MEDIA WINDOW
↑↓
```

By pressing the , jogging keys, you can enter the length of the media you need for your task.

```
      MEDIA WINDOW
XXXX  YYYY
```

The XXXX-value is the media length you define with the  , jogging keys.
The YYYY-value is the cutting width of the media measured by the cutter.
Note : when the media length displayed is zero (0), the default media length will be used.

Press to confirm the length and the cutter will start 'shuffling' the vinyl in order to establish a track on the vinyl.

```
500mm/s  120 g                K
.45 mm   ONLINE              1
```

The cutter is now ready to receive a file.

```
500mm/s  120 g                K
.45 mm  *ONLINE              1
```

The cutter has been selected by the computer.

If you pressed however, the default media length is displayed :

```
    DEFAULT WINDOW
↓↑   XXXX mm
```

An XXXX-value will appear. You can change the default value by pressing the (+10), (-10), (-100), (+100) jogging keys.

Press to confirm the length and the cutter will start 'shuffling' the vinyl in order to establish a track on the vinyl.

```
500mm/s  120 g                K
.45 mm   ONLINE              1
```

The cutter is now ready to receive a file.

500mm/s 120 g	K
.45 mm *ONLINE	1

The cutter has been selected by the computer.

When the built-in media sensors detect the end of the roll the message **END OF MEDIA** will be displayed. The display will show the actual length loaded.
If that area is sufficient, press **1** to **ACCEPT**. If not, press **2** to **ABORT** and the media will automatically return to its origin.

CAUTION

When you accept the loaded area in sheet mode, the cutter will clip the sign to be cut in case of insufficient media. Compare the area loaded with the area needed for the sign !

SECTION 2

OPERATION

2.1. THE CONTROL PANEL

Figure 2-1 shows the control panel of the SummaCut D500 cutter. The main functions of the liquid crystal display (LCD) and the control panel keys are explained in the following paragraphs.

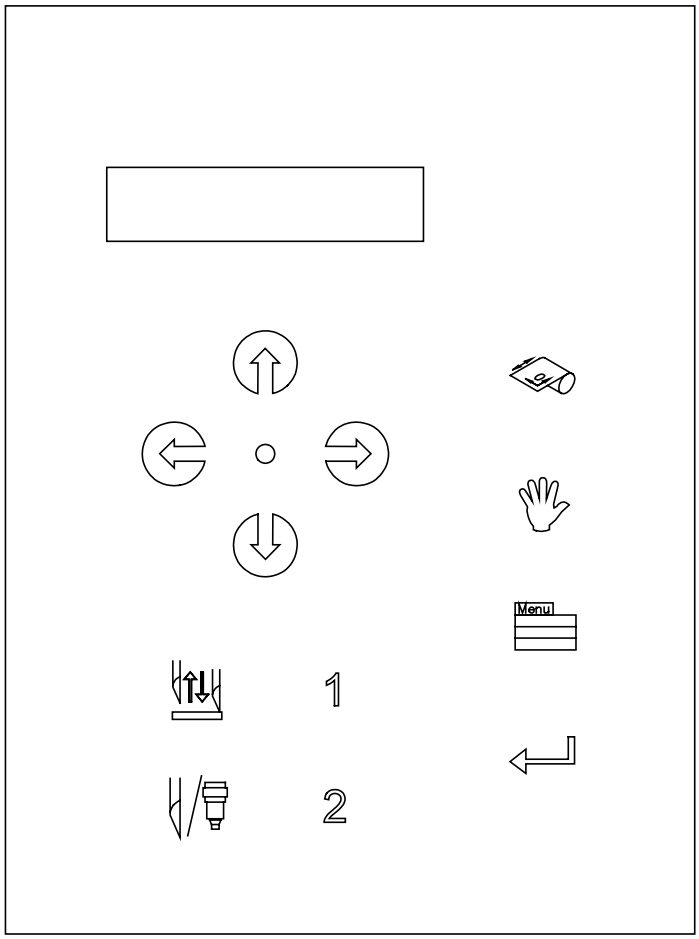


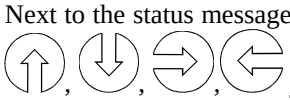
FIGURE 2-1:
SUMMACUT D500, CONTROL PANEL

2.1.1. THE LIQUID CRYSTAL DISPLAY

The 32-character liquid crystal display (LCD) contains two lines of 16 characters each. The LCD provides cutter status information during operations and displays menu options for the configuration of the cutter.

The contrast of the LCD can be adjusted from the control panel in order to ensure optimum readability under varying lighting conditions.
Instructions for adjusting the LCD contrast are given in Section 2.6.12.

The various menu and submenu items are always presented in a loop, which means that, when the last menu or submenu item is displayed, pressing the appropriate key will automatically take you back to the first item of the same menu or submenu.

Next to the status messages and/or menu options displayed on the LCD, arrow symbols representing the  jogging keys and key will tell you what keys to press to go to the next menu item (top line of the display) or to the next value for a given submenu item (bottom line of the display).

2.1.2. THE RESET/LOAD KEY

The key (RESET/LOAD) is used to move the origin, to initiate a load sequence, to reset the cutter, to abort the cut in progress or to recut the last file. When the key (RESET/LOAD) is pressed, the cutter goes off line, suspends all operations in progress and displays the RESET/LOAD menu. Press the key until SET ORIGIN, LOAD, RESET, ABORT or RECUT is displayed. To confirm RESET, ABORT or RECUT press the key (ENTER). To execute the SET ORIGIN instruction move the knife origin using the jogging keys and press the key (ENTER) to confirm the new origin position. To initiate the LOAD instruction press the **1** or **2** key to initiate a load sequence for a ROLL or SHEET respectively. Upon termination of any of these instructions, the cutter goes on line again.

The SET ORIGIN instruction is used to move the knife origin.
The LOAD instruction is used to initiate a load sequence.
The RESET instruction performs a complete reset of the cutter.
The ABORT instruction simply cancels the cut in progress. Aborting a cut will not reset the cutter parameters: the parameters which had been selected for the cut remain in effect.
The RECUT instruction recuts the last file sent to the cutter (provided that it fitted into the buffer).

2.1.3. THE ON LINE KEY

The key (ON LINE) toggles between on line and off line operation. When the key is pressed, the selected mode (ON LINE or OFF LINE) is displayed on the LCD.

Selecting OFF LINE will suspend all operations in progress. Pressing the key while the cutter is off line will make the cutter go on line again, resuming the suspended operation.

While the cutter is off line, the following operations can be performed:

- Press the ⇐ or ⇒ jogging key to move the tool carriage to the left or right.
- Press the ⇑ or ⇓ jogging key to make the media move forward (towards you) or backward (away from you). Moving the media forward will prove to be very practical when you require to cut the finished sign off manually.
- Press the key (TOOL UP/DOWN) to lower or raise the active tool. If the tool is not moved for approximately eight seconds, it is raised automatically.

2.1.4. THE MENU KEY

The key (MENU) is used to select one of the menus. Pressing the key will make the cutter go off line and suspend all operations in progress. Pressing the key repeatedly will display the different menus one by one. As the menu options are on a loop, pressing the key when the last option is displayed will automatically return you to the first option.

The different menus are illustrated in Figure 2-2.

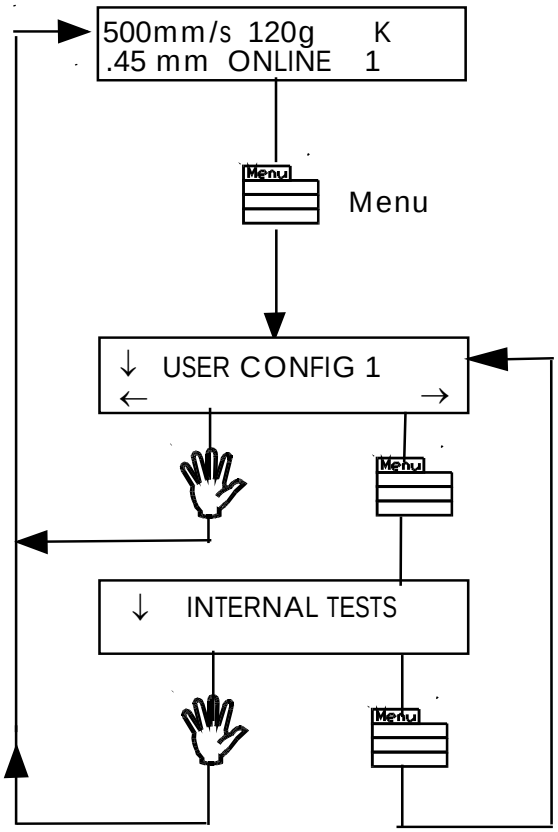


FIGURE 2-2 :
SUMMACUT D500 CONFIGURATION SUBMENUS

To select a menu by scrolling through the different options, press the jogging key .

To exit from the menus and resume the previous on line operation, press the key (ON LINE).

Under normal conditions, the cutter is on line; it may then be selected by the host computer for a cutting or plotting operation or deselected by the host computer. Pressing the , or key will make the cutter go off line, in order to initiate another operation.

The contents of the different menus are summarised in Table 2-1 on the next page.

MENU	**DESCRIPTION**
USER CONFIG 1 (->4)	Selects a given active cutter configuration from one of the four sets of configuration parameters stored in the unit's memory
INTERNAL TEST	Activates one of the resident cutting plots provided for informational purposes.

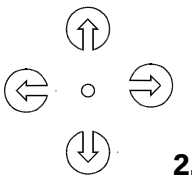
TABLE 2-1:
CONTENTS OF THE SUMMACUT D500 MENUS

2.1.5. THE ENTER KEY

The key (ENTER) is used to select the item currently displayed on the LCD.

1 2 2.1.6. THE 1 AND 2 KEYS

The use of the **1** and **2** keys varies according to the operation in progress; their use is displayed on the LCD as appropriate.



2.1.7. THE JOGGING KEYS

The use of the jogging keys varies according to the operation in progress.

For example, when working in the USER CONFIG menu, the or jogging key is used to select the new user number and the or jogging key is used to go to the previous or next menu item.

2.1.8. THE TOOL UP/DOWN KEY

The key (TOOL UP/DOWN) is used while the cutter is off line to raise or lower the tool. Pressing the key once will lower the tool onto the media. Pressing the key again will raise the tool.

If the tool is not moved for approximately eight seconds, it is raised automatically.

2.1.9. THE TOOL SELECT KEY

The key (TOOL SELECT) is used to select knife or pen operation. To temporarily change the tool press the key, then press **1** for KNIFE or **2** for PEN. When the cutter is powerd on the next time, the default tool will be selected. For setting up the default tool see Section 2.4.5.

2.2. NORMAL OPERATION

The term "normal operation" covers on line operation, off line operation and local operation, i.e. the three types of operation for actual cutting or plotting. They are explained in further detail in the following paragraphs.

2.2.1. ON LINE AND OFF LINE

On line and off line are two important concepts when using the SummaCut cutters. The cutter is on line only when the following message is displayed on the LCD :

500mm/s 120 g	K
.45mm ON LINE	1

This display message should be read as follows :

500 mm/s	=	velocity
120 g	=	knife pressure
K	=	knife operation (K) or pen operation (P)
.45 mm	=	knife offset
ON LINE	=	cutter is ready to receive data
1	=	user number

In all other cases, the cutter is off line.

When on line, the cutter can be addressed by the host computer, which means that the cutter will execute cutting or plotting instructions issued by the host computer's application software. The host computer will first issue a SELECT sequence to the on line cutter, and the message "*ON LINE" will be displayed on the LCD. The asterisk indicates that the host is in communication with the cutter : i.e. the cutter is now “selected” by the computer.
When the cutter is on line and ready to receive instructions from the host computer, it will remain deselected until actual instructions from the computer are received. When the cutter is on line, but has not been selected by the host computer, the message "ON LINE" is displayed on the LCD, without the asterisk.

For normal cutting operations, the cutter **MUST** be on line, so that it can receive instructions from the host computer and the cutting/plotting software.

When the cutter is on line, but has not been selected by the host computer, the following conditions must be met:

- The cutter must be powered ON.
- Media must be loaded. For detailed media loading instructions, see Section 1.8 .
- The proper tool must be installed.
- The cutter must be connected to the host computer via a RS-232-C link or a parallel interface.
- The cutter must be configured for the scheduled operation.

To put the cutter off line, press the , or

key. Pressing any of these keys will suspend the current cutting/plotting operation until the cutter is put on line again.

2.2.2. LOCAL OPERATION

Local operation is only possible while the cutter is off line. Local operation means that the cutter is operated directly by the operator via instructions entered on the control panel.

➔ To work in local operation mode, proceed as follows:

1. If the cutter is still on line, press the key once to select off line.

2. To move the carriage to the left or right, press the or jogging key.

3. To make the media move forwards (towards you) or backwards (away from you), press the or jogging key.

4. To move the tool head up or down, press the key.

5. To end local mode and put the cutter on line again, press the key.

2.3. THE USER CONFIG MENU

The USER CONFIG(uration) menu gives access to different submenus which allow you to configure the cutter's operating parameters. It should be taken into account that access to some of the submenus will be determined by the plotting language you are using.

Four different user configurations can be saved. The selected configuration number is displayed on the LCD next to the USER CONFIG message. These four USER CONFIG 1(->4) menus are maintained independently.

➔ To select another **configuration number**, proceed as follows:

1. Power on the cutter.

2. Press the key until USER CONFIG 1(->4) is displayed.

3. Press the or jogging key until the desired configuration number is displayed next to USER CONFIG.

> **NOTE**
>
> Before altering any of the items in the USER CONFIG menu, make sure that you have previously selected the right configuration number in the USER CONFIG 1(->4) menu.

Figure 2-3 shows the USER CONFIG submenus.

➔ To select and alter a configuration parameter, proceed as follows:

1. Power on the cutter.

2. Press the

key until USER CONFIG 1(->4) is displayed.

3. Press the or jogging key until the desired submenu is displayed on the first line of the LCD.

4. Press the or jogging key until the desired value is displayed on the second line.

5. Press the key to confirm the selection, an * will be displayed next to the selected setting. (An * is always displayed next to the active value.)

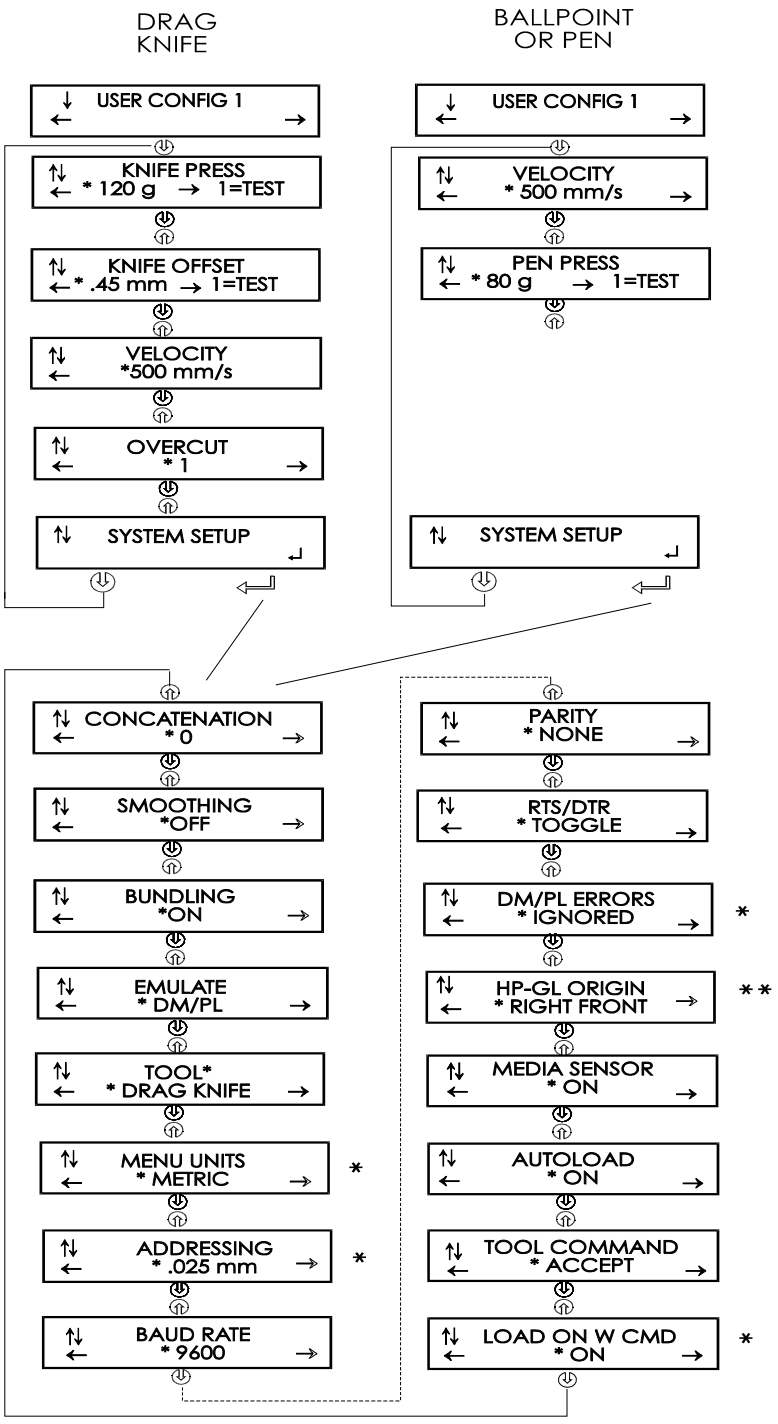


FIGURE 2-3 :
FLOWCHART SHOWING FACTORY PRESET MENU SETTINGS

* in DM/PL only
** in HP-GL and HP-GL/2 only

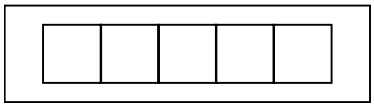
2.3.1. KNIFE PRESSURE

The KNIFE PRESSURE submenu is used to set or modify the cutting pressure of the knife.

The default knife pressure value is 120 grams.
The knife pressure can be set between 0 and 400 grams.
The knife pressure value is set in 5 gram increments.
On the LCD, the active knife pressure value is marked with an *.
Knife pressure setup is explained in detail in section 1.7.1.

2.3.2. KNIFE OFFSET

The KNIFE OFFSET submenu is used to set or modify the distance between the knife blade tip and the center axis.
The default knife offset value is .45 mm.
The value can be set between 0 and 1 mm.
Make sure that the selected knife offset value matches that of the knife. Some fine tuning may be necessary because of the mechanical tolerances on the knife. To verify the knife offset, a test can be cut by pressing the **1** key.
If the offset value is set too low, the rectangles will not close.
When the offset value is set too high, the rectangles will be distorted.
The offset test is illustrated below.



2.3.3. VELOCITY

The VELOCITY submenu is used to set or modify the velocity of the tool.
The default velocity is 500 mm/s (20 ips).
The velocity can be set between 50 mm/s (2 ips) and 600 mm/s (24 ips).

2.3.4. OVERCUT

The OVERCUT submenu enables you to generate an overcut in order to facilitate weeding the cut.

The default overcut is set to 1.
The overcut setting can be disabled (=0) or set to any value between 0(=off) and 10. One unit is about 0.1 mm or 0.004 ".
On the LCD, the active value is marked with an *.

2.3.5. SYSTEM SETUP

The SYSTEM SETUP submenu covers the menu items you normally only need when establishing the initial setup e.g. when you install the cutter in combination with the software you use.
Press the ⏎ key to access the different submenu items, which are explained in section 2.4.

2.4 SYSTEM SET UP

Refer to Figure 2-3.

2.4.1. CONCATENATION

The CONCATENATION feature increases the speed and quality with which cut data having a very high resolution is cut. However when changing over to normal characters again, deactivate concatenation by setting this parameter to 0.
On the LCD, the active concatenation value is marked with an *.

2.4.2. SMOOTHING

The SMOOTHING feature helps to cut smoother curves when curve data with many short vectors is received from the computer.
The default setting is OFF.

2.4.3. BUNDLING

The BUNDLING feature couples vectors (up to a max. of 256) to one polygon to increase the cut quality and the overall throughput. However a time gab may occur in between the polygons. To remove this time gap, set BUNDLING to OFF. The default setting is ON.
On the LCD, the active setting is marked with an *.

2.4.4. EMULATE

The EMULATE submenu is used to select the active cutting/plotting language for the cutter.
The SummaCut cutters support DM/PL , HP-GL and HP-GL/2.
On the LCD, the active plotting language setting is marked with an *.

NOTE

The active cutting/plotting language MUST match the cutting software.

Always select a language which is supported by the host computer's cutting software.

Whenever possible, select the DM/PL menu option to set the active cutting/plotting language to Houston Instrument Digital Microprocessor/Plotting Language (DM/PL). This selection will allow the cutter to

operate with DM/PL-based cutting / plotting software. This language, having special command extensions for cutting, normally gives superior cutting performance.

Select the HP-GL menu option to set the active cutting/plotting language to HP-GL. The cutter will emulate an HP model 758xB plotter (with selectable origin, see 2.4.12).

2.4.5. TOOL

The TOOL submenu is used to select the default tool at power up.
To configure the cutter for plotting operations, select PEN.
To configure the cutter for cutting operations, select the DRAG KNIFE option.
To select a tool other than the default one temporarily, see section 2.1.9.

2.4.6. MENU UNITS

The MENU UNITS submenu allows you to select English or metric menu units for DM/PL. In HP-GL & HP-GL/2 the menu units are always in metric.

For models sold in the US, English units are the default setting.
For models sold in Europe, metric units are the default setting.
On the LCD, the active menu units setting is marked with an *.

2.4.7. ADDRESSING

The ADDRESSING submenu is used to select the cutter's default DM/PL user-addressable resolution. In HP-GL & HP-GL/2 the addressing is fixed at 0.025 mm.
The default addressing resolution is 0.025 mm (Europe) or 0.001" (US).
The user-addressable resolution can be set to 0.025 mm or 0.001" or 0.1 mm or 0.005".
On the LCD, the active resolution value is marked with an *

2.4.8. BAUD RATE

The BAUD RATE submenu is used to set or modify the operating baud rate for RS-232-C serial communications between your cutter and the host computer.

The default baud rate is 9600 bps.
The baud rate can be set to any of the following values: 2400 bps, 4800 bps, 9600 bps, 19200 and 38400 bps.
On the LCD, the active baud rate value is marked with an *.

NOTE

The baud rate setting of your cutter MUST match the host computer's baud rate setting.

2.4.9. PARITY

The PARITY submenu is used to set or modify the byte format and parity type for RS-232-C serial communications between your cutter and the host computer.

The default parity setting is bit 8 = 0 (8 data bits, no parity, the 8th bit being a low bit). The parity can be set to any of the following values:

LCD information	Parity setting	Remarks
BIT 8 = 0	8 data bits, no parity	bit 8 = low (0)
BIT 8 = 1	8 data bits, no parity	bit 8 = high (1)
EVEN	7 data bits, 1 parity bit	parity bit = even
ODD	7 data bits, 1 parity bit	parity bit = odd

On the LCD, the active parity setting is marked with an *.

NOTE

The parity setting of your cutter MUST match the host computer's parity setting.

2.4.10. RTS/DTR

The RTS/DTR submenu controls the Request To Send (RTS) and Data Terminal Ready (DTR) signals of the cutter's RS-232-C serial communications interface for hardware handshaking.

The RTS/DTR default value is TOGGLE.
RTS/DTR can be set to TOGGLE (hardware handshaking) or HIGH (software handshaking).
On the LCD, the active handshaking setting is marked with an *.

2.4.11. DM/PL ERRORS

The DM/PL ERRORS submenu is used to determine whether or not different DM/PL errors, such as illegal plot commands, invalid parameter ranges or communication errors, will be displayed on the LCD. This menu will only be displayed if PLOT LANGUAGE is set to DM/PL.

The DM/PL ERRORS submenu can be set to REPORTED or IGNORED.
On the LCD, the active setting is marked with an *.
The feature is activated by selecting REPORTED. It is normally used only when attempting to debug a communication link between the cutter and the host computer.
After the communication link has been debugged, select IGNORED to disable the feature.

2.4.12. HP-GL ORIGIN

The HP-GL ORIGIN submenu will only be displayed if the PLOT LANGUAGE is set to HP-GL. (See Paragraph 2.4.4.) The HP-GL ORIGIN submenu is used to set the origin in the center (see HP-GL 758x) or the bottom-right corner (see HP-GL 7475) of the loaded media.

The HP-GL ORIGIN option can be set to RIGHT_FRONT or CENTER.
On the LCD, the active setting is marked with an *.

If the cut is found to be incomplete, and is wholly located in the upper left corner of the media then modify the HP-GL ORIGIN setting to RIGHT FRONT. If the cut is found to be incomplete, and is wholly located in the lower right corner of the media then change the HP-GL ORIGIN setting to CENTER.

2.4.13. MEDIA SENSOR

The MEDIA SENSOR submenu is used to activate or deactivate the media sensors. On the LCD, the active setting is marked with an *.
The sensors detect whether media is loaded or detect the end of media. The sensors prevent damage to the cutting strip and knife tip.

2.4.14. AUTOLOAD

The AUTOLOAD option enables the user to the change the vinyl unroll proceedings. When AUTOLOAD is ON , the cutter will automatically unroll the vinyl when needed. When the AUTOLOAD option is OFF, the operator himself should unroll enough media before starting to cut.
The default setting is ON. The best results and performance are guaranteed when using this setting. On the LCD display, the active setting is marked with
an *.

2.4.15. TOOL COMMAND

The TOOL COMMAND is used to determine whether the DM/PL and HP-GL pen/knife-select commands (the P and SP commands respectively) are ignored or accepted.
When the TOOL COMMAND option is set to “ACCEPT”, the P or SP commands will change the selected tool in the cutter according to the suffix that follows the pen/knife command. The cutter’s LCD will, e.g. prompt the user with the following message: “INSERT PEN” when a P2 command is sent.
When the TOOL COMMAND option is set to “IGNORE” the pen/knife commands are ignored.
On the LCD, the active setting is marked with an *. The default setting is “ACCEPT”.

2.4.16. LOAD ON W COMMAND

The LOAD ON W CMD submenu will only be displayed if the PLOT LANGUAGE is set to DM/PL (See Paragraph 2.4.4.). The LOAD ON W CMD determines, when receiving the DM/PL Window-command (W-command), whether aside from the scaling function, media is loaded or not. Besides scaling, the W-command is also very useful when cutting long signs. With the W-command, media loading will go smoother. Sufficient media will be pulled off the roll at once. Even when AUTOLOAD is off, there is no need anymore to unroll the media manually.

2.5 INTERNAL TEST MENU

➔ To access an internal cut, proceed as follows:

1. Power the cutter on.
2. Load cutting or plotting media.
3. Install a knife or a pen.
4. Press the Menu key until INTERNAL TEST is displayed and press the ⇩ jogging key.
5. Press the ⇩ or ⇧ jogging key until the desired internal plot is displayed.
6. To perform the plot, press the ↵ key.

To exit from this menu and go to another menu, press the Menu key until the desired menu is displayed.

To exit from the menus and put the cutter on line again, press the key.

Figure 2-4 shows the different INTERNAL TEST submenus.

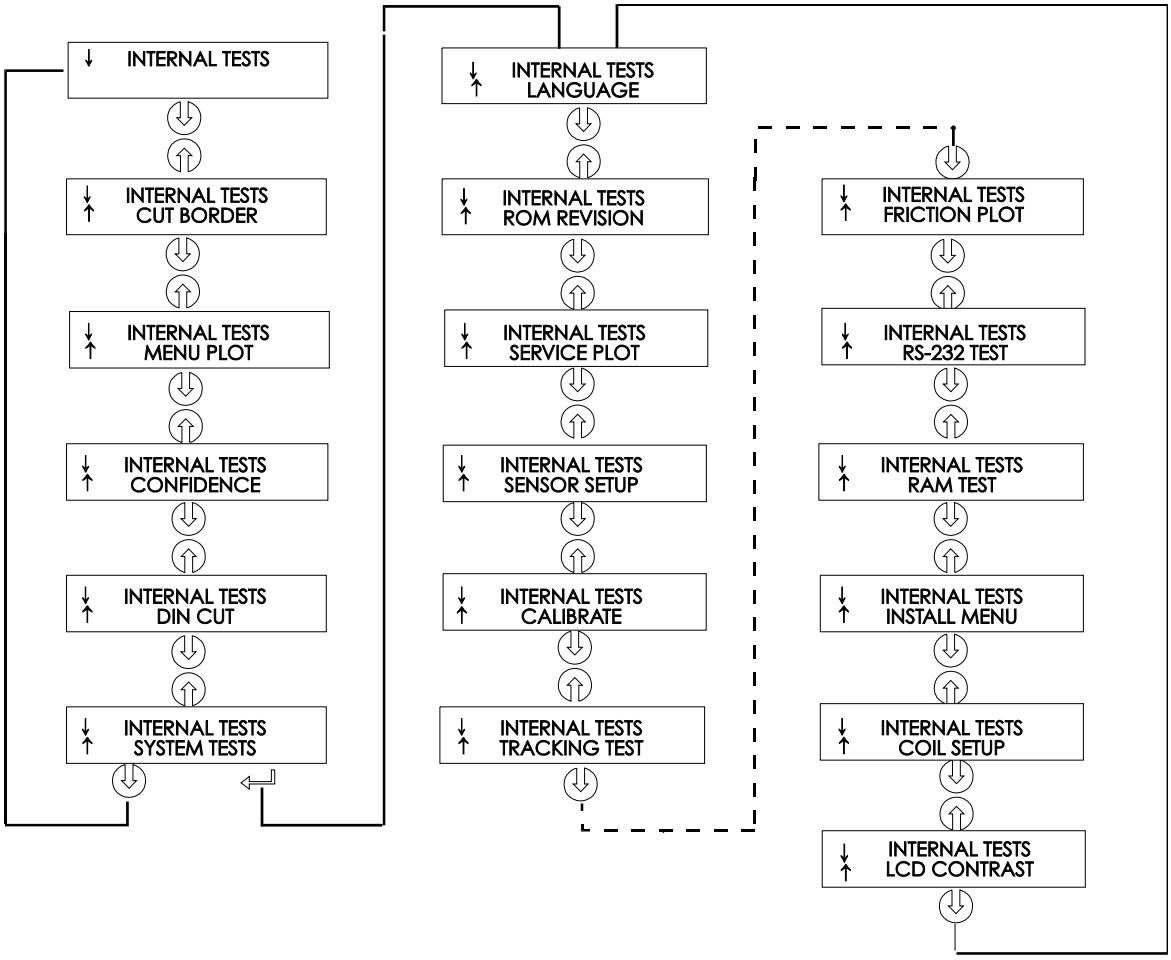


FIGURE 2-4 :
INTERNAL TESTS SUBMENUS

2.5.1. CUT BORDER

The CUT BORDER submenu is used to cut the border of the media area which was defined during the load sequence. This function is particularly useful if you want to verify the exact cutting area.

2.5.2. MENU PLOT

The MENU PLOT is a hard copy of the present cutter configuration, i.e. the items selected in the USER CONFIG submenus described in Section 2.3. The plot is organised by menu categories to show the current values for the various USER CONFIG 1(->4) configurations. To run this plot, load a sheet of plotting paper and install a pen.

NOTE

It is strongly recommended to produce a MENU PLOT hard copy each time you alter the cutter configuration. The resulting plot should be kept with the cutter documentation in order to provide other users with details of the actual configurations of the unit.

2.5.3. CONFIDENCE CUT

The CONFIDENCE cut performs an electrical and mechanical test of the cutter to make sure that the cutter is fully operational. A media sheet of at least A3/A- size should be used for this plot.

2.5.4. DIN CUT

The DIN CUT also performs an electrical and mechanical test of the cutter, in order to check the cut quality, but also provides the user with feedback on knife setting, knife pressure, knife offset and cutting depth.

This cut is always run as a DIN A4 portrait/A-size image, regardless of the actual size of the media loaded. If the media loaded is smaller than DIN A4/A-size, part of the outer box will be clipped (not cut). This cut is always executed in the sequence prescribed by the ISO DIN standard.

2.5.5. SYSTEM TESTS

The SYSTEM TESTS submenu covers the menu items you only occasionally need to adjust the cutting process.

Press the **ENTER** key to access the different submenu items which are explained in section 2.6 below.

2.6. SYSTEM TESTS

The SYSTEM TESTS menu is a special set of procedures which are not required for normal cutter operation. Field service personnel, however, will use the SYSTEM TESTS menu occasionally. When in SYSTEM TESTS, the cutter is fully operational and performs as described in this manual.

2.6.1. LANGUAGE

The MENU LANGUAGE submenu is used to set or modify the dialogue language on the LCD. Press the ⇧ or ⇩ jogging key until the desired language is displayed on the LCD and press ↵ to confirm. The information on the LCD can be displayed in English, French, German, Spanish or Italian.

2.6.2. ROM REVISION

Selecting the ROM REVISION option, by pressing the ↵ key will furnish the details on the cutter's ROM revision. This information is often helpful to technicians when diagnosing problems over the telephone.

2.6.3. SERVICE PLOT

The SERVICE PLOT provides information about the cutter, which is helpful when requesting service for your cutter. The SERVICE PLOT is always plotted at the same size and should be performed with a pen on paper.

The plot shows the cutter model number, the revision numbers of the installed ROM (Read Only Memory) circuits, the selected baud rate, the resolution and buffer (memory) size.

CAUTION

The following test routines are normally restricted to Summagraphics Field Service Personnel.

2.6.4. SENSOR SETUP

The SENSOR SETUP option is a useful routine to check whether or not the front and rear media sensor are functioning properly and whether the switching levels of these sensors are correctly set.

2.6.5. CALIBRATION

Calibration allows the length of the lines cut to be adjusted to within the specifications.
For instance, if a cut line should measure 100 mm exactly, the cutter can be adjusted for any discrepancy.

2.6.6. TRACKING TEST

This test allows the tracking quality of the machine to be verified.

2.6.7. FRICTION PLOT

This test routine must be performed with a pen and is used to detect problems with the cutter. The FRICTION PLOT is automatically scaled to fit the currently installed paper size. This test should only be performed by qualified service personnel.

2.6.8. RS232 TEST

The RS232 TEST routine verifies the cutter's RS-232-C serial communications (transmit data, receive data, and hardware handshaking) circuits. This test does not require pen, knife or media to be loaded.

➔ To run the RS-232-C test, proceed as follows :

1. Unplug the RS-232-C data cable from the rear panel of the cutter.
2. Use a loopback test cable to connect pin 2 of the cutter's data connector to pin 3 and pin 7 to pin 8.
3. With RS232 TEST displayed, press the ENTER key. The cutter will start transmitting and receiving data at all available baud rates and parity settings. The length of the transmissions will vary because of the different baud rates used. The unit then checks the hardware handshake lines.
4. Upon completion of the test, remove the loopback test cable from the cutter rear panel RS-232-C connector.
5. Plug the RS-232-C data cable into the connector.

2.6.9. RAM TEST

This test completely checks the RAM bit for bit.
When running this test the cutter will not respond. After this test, power the cutter off, then on .

2.6.10. INSTALL MENU

The INSTALL MENU routine restores the factory-defined menu settings in all four USER CONFIG menus. This test routine can be performed without a tool and without media.

2.6.11. COIL SETUP

This test is used to calibrate knife and pen pressure and to set the knife and pen “landing”.
After adjustment, the value is saved in the system’s non-volatile RAM.
To execute this test a tension gauge of ± 100 gr and ± 500 gr is required.
In the upper line of the display the desired pressure appears and in the bottom line of the display the value that has to be sent to the head to reach this pressure (this value is between 0 and 127).

2.6.12. LCD CONTRAST

The LCD CONTRAST submenu is used to adjust the contrast (or intensity) of the liquid crystal display on the control panel.

Press the or jogging key to increase or reduce the contrast and press to confirm.

SECTION 3

GENERAL INFORMATION

3.1. MAINTENANCE & CLEANING

The SummaCut D500 cutter has a number of sliding surfaces made of smooth metals and plastics. They are virtually friction-free and require no lubrication. They will, however, collect dust and lint which may affect the performance of the cutter. Keep the cutter as clean as possible by using a dust cover. When necessary, clean the unit with a soft cloth dampened with isopropyl alcohol or mild detergent. Do not use abrasives.

3.1.1. CLEANING THE DRIVE SYSTEM

After a time, the sleeves of the drive drum may become clogged with accumulated residue from the media. This situation may affect traction as the media will tend to slip between the pinch rollers and the drive sleeves.

➔ To clean the drive sleeves, proceed as follows:

1. First disable the sensors by covering them, or via the configuration menu (see 2.4.13 Media Sensor).

2. Place the cutter in local operation. (See Section 2.2.2.) Local operation will allow you to use the control panel jogging keys, even when no media is loaded.

3. Remove the backing from a piece of vinyl. Place the vinyl with the tacky side down between one of the pinch rollers and a drive sleeve. Raise the pinch roller arm.

4. Use the **UP** and **DOWN** jogging keys to move the piece of vinyl backward and forward several times, until all residue is removed from the drive sleeves.

5. Lower the pinch roller arm and remove the piece of vinyl media.

6. Repeat steps 3 through 5 for the other drive sleeves.

7. Set the cutter's power switch to OFF.

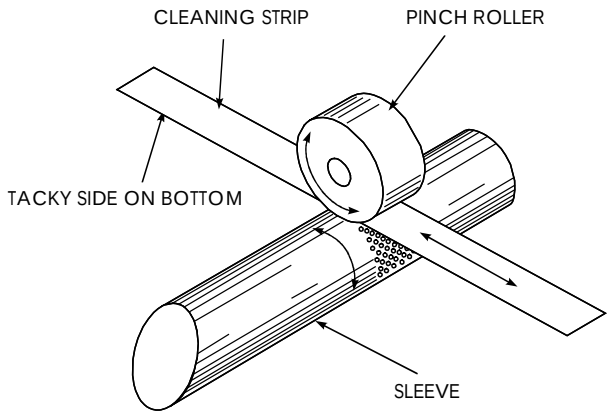


FIGURE 3-1:
CLEANING OF THE FRICTION DRIVE SYSTEM

3.1.2. CLEANING THE SENSORS

After a certain time, the sensor may become dirty with accumulated residue from the media. This situation may cause malfunctioning of the cutter.

➔ To clean the sensor area, proceed as follows:

1. The sensors are located on the cutter's right side. One sensor is located on the front platen the other sensor is located on the rear platen.

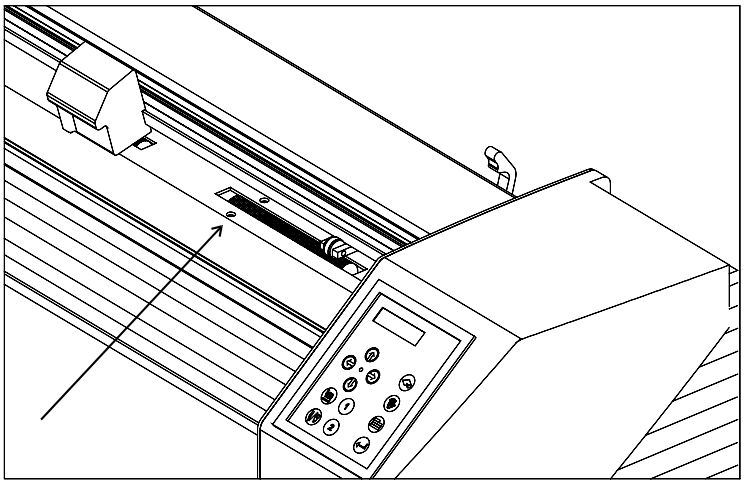


FIGURE 3-2:
LOCATION OF THE SENSORS

2. To keep the sensors clean, it is sufficient to wipe them out now and then with a cotton swab.

3.2. OPERATING VOLTAGE CONVERSION

The power entry module cover shows four possible AC voltage settings (100 V, 120 V, 220 V and 240 V). The pin in one of the holes indicates the cutter's active voltage setting. If this setting does not match the voltage supplied to your site, you must change the voltage ***before*** powering on the cutter.

When changing the voltage setting, you will also have to change the fuses as appropriate to the voltage.

To change the fuse(s), remove the fuse(s) from the fuse box behind the cover plate of the power entry module.

For 100 or 120 V AC operation, use only 1.0 A Slo-Blo fuses.
For 220 or 240 V AC operation, use only 0.5 A Slo-Blo fuses.

NOTE

Always make sure that you are using the correct fuses for your voltage selection.

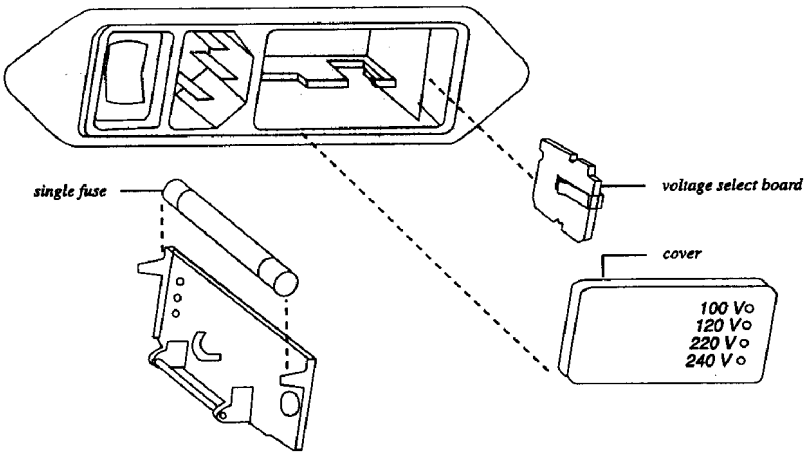


FIGURE 3-3
POWER ENTRY MODULE

SECTION 4
INTERFACE

4.1. INTRODUCTION

This section describes the signal connections for RS-232-C serial communication between the D500 cutter and the host computer. When connecting the cutter to the host computer, always proceed as follows:

1. Refer to the cutting/plotting application software documentation and check the recommended cabling specifications.

   If the Summagraphics D500 cutter is not specifically listed, use the cabling specified for the Houston Instrument DMP-60C cutters.

2. If the documentation of the cutting/plotting software does not contain specific cabling instructions, use the Houston Instrument cable specifications recommended for your computer.

4.2. INTERFACE NOTES

4.2.1. SYSTEM SETUP

> **NOTE**
>
> The setup information in this section assumes that you are using the MS-DOS or PC-DOS operating system.

➔ To set up your system, proceed as follows:

1. Boot up the operating system.

2. If the cutter is to be connected to serial port 1 (known as COM1) the port must be configured by entering the following command at the system prompt: MODE COM1:9600,N,8,2,P.

3. If the cutter is to be connected to serial part 2 (known as COM2) the port must be configured by entering the following command at the system prompt: MODE COM2:9600,N,8,2,P.
4. To redirect the output to serial port #1, enter the following command at the system prompt: MODE LPT1:=COM1:.

5. To redirect the output to serial port #2, enter the following command at the system prompt: MODE LPT1:=COM2:.

6. The computer end of the cable must be plugged into the serial port defined as COM1 (or COM2). The cutter's baud rate must be set to 9600, with parity NONE and RTS/DTR mode set to TOGGLE.

4.2.2. SERIAL INTERFACE CONNECTOR ON CUTTER

RS-232C Serial Interface Connector		
Pin n°	*Signal*	*Description*
1	NC	Not Connected
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal ground
6	NC	Not connected
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected

4.3. AVAILABLE SERIAL SIGNALS

If you are making your own cable, only a few of the cutter pins will actually need to be connected to the host computer. To ensure optimum results, the cable length should not exceed 4.8 m (16 feet). It should be taken into account that your computer or cutting software may also require additional loopback connections at the host computer's end of the data cable.

- Connect the Transmit Data (TXD) pin of the computer to pin #2 of the cutter.
- Connect the Receive Data (RXD) pin of the computer to pin #3 of the cutter.
- For hardware handshaking, connect the Clear To Send (CTS) pin of the computer to pin #4 or pin #7 of the cutter. Connect the Request To Send (RTS) pin of the computer to pin #8 of the cutter.
- Connect the ground (GND) pin of the computer to pin #5 of the cutter.

APPENDIX A

MEDIA CERTIFICATION

Types of media

A wide range of vinyl types has been evaluated and extensively tested on the SummaCut D500 cutter. To ensure operation in compliance with the D500's functional specifications as listed in Section 1 of the User's Manual, only duly certified media should be used.

An alphabetic list of all duly certified media is included below. Before using other media, please contact your local Summagraphics representative for advice.

Manufacturer	Type
3 M	Scotchcal Series 100 Scotchcal Series 3480 Scotchcal Translucent Series 3630 Scotchcal Special Effects 210 Controltac Series 170 Controltac Series 180
APA	
ARLON	Series 2100 Series 2500
FASSON	Economy Fascal 900 High Performance Fascal 4500 Translucent Fascal 8800 Intermediate Rubyscreen
GRAFITACK	Economy 100 Series 200 - 300 Series Transparent
KAPCO	High Performance Cast Vinyl Intermediate K5000
MACTAC	MaCal 8900 MaCal 9700 MaCal 9800
MULTIFIX	Series 1000 Series 5000 Series 7000
PMF	721
TESA	Tesacal 4196
X-FILM	Economy

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